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IMAGERY
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PIR

PHOTOGRAPHIC INTELLIGENCE REPORT

VITAL RECORDS COPY

ISODENSIMETRIC TRACES OF PAD A-I

SERVICE TOWER, TYURATAM MISSILE

TEST CENTER, USSR

[redacted] 25X

CIA/PIR 61029

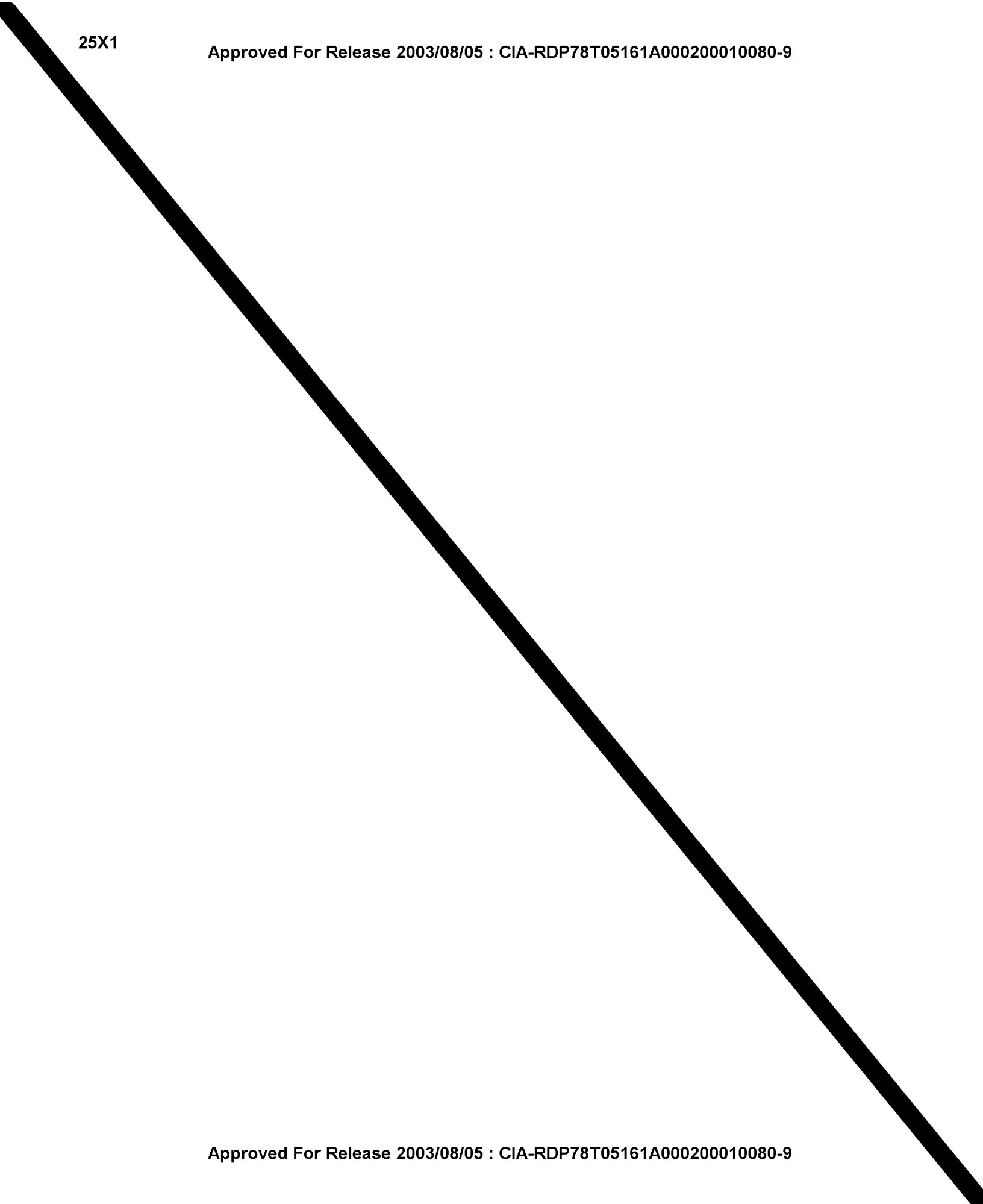
[redacted] 25X

DATE Sep 1965

COPY

PAGES 6

TOP SECRET



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25X1 [redacted] DIR 61029 SEPT 1965 TS [redacted] 25X1

CIA IMAGERY ANALYSIS DIVISION

[redacted] 25X1

CIA/PIR-61029

ISODENSIMETRIC TRACES OF PAD A-1 SERVICE TOWER,

TYURATAM MISSILE TEST CENTER, USSR

Isodensimetric traces of the service tower at Pad A-1, Tyuratam Missile Test Center, were made to determine if the tower had been modified in 1964 to accommodate a different type of rocket motor. Various 25X1 [redacted] coverages were utilized in an attempt to determine any tower modifications. Isodensimetric traces were made from photography of [redacted] 25X1 25X1 [redacted] Results are presented in Figures 2 thru 4.

The results of these traces were inconclusive as to any tower modifications due to the variations in photography and sun angles plus the complexity inherent in the design of the tower.

The Isodensimetric Technique

The Isodensitracer scans a transparency, measuring the density of the image continously as it scans. The density is printed out in coded form on a recording which shows the pattern of the original image as a pattern of blank, dotted, or dashed areas. When the scan is in the direction of increasing density, the print-out records in the sequence: blank-dot-dash-blank. Decreasing density is coded in the opposite direction: blank-dash-dot-blank.. Thus, to interpret an isodensity recording (usually called an "IDT trace") remember that the dot-dash sequence always leads in the direction of increasing density.

The Isodensitracer can record at magnifications of 1, 2, 5, 10, 20, 50, 100, 200, and 1000 times. The density-code cycle can be set to indicate density changes ranging from 0.005 to 0.12 density units. The scanning aperture can be as small as 3-5 microns, if the detail and density of the original allow.

In essence, the Isodensitracer can detect a difference in density with a sensitivity about 10 times better than the human eye. It can record this

difference as an interpretable pattern at magnifications of up to 1000X. Within wide limits, the overall level of density has no effect upon the detection of density differences. This means that very subtle changes in surface brightness can often be analyzed even if, to the eye, a surface appears uniformly bright in a photograph. Or again, the shapes of objects hidden in deep shadow can often be traced out in an area the eye sees only as a solid black mass. Thus, in special situations, the Isodensitracer can recover details present on the photographic film, even though they may fall well outside the range of normal exposure latitude.

REFERENCES

25X1 [redacted]

REQUIREMENT

C-SI5-82,504

CIA/IAD PROJECT

30584-5

[redacted] 25X1
[redacted] 25X1

LAUNCH AREA A-I, TYURA TAM MISSILE TEST CENTER

25X1

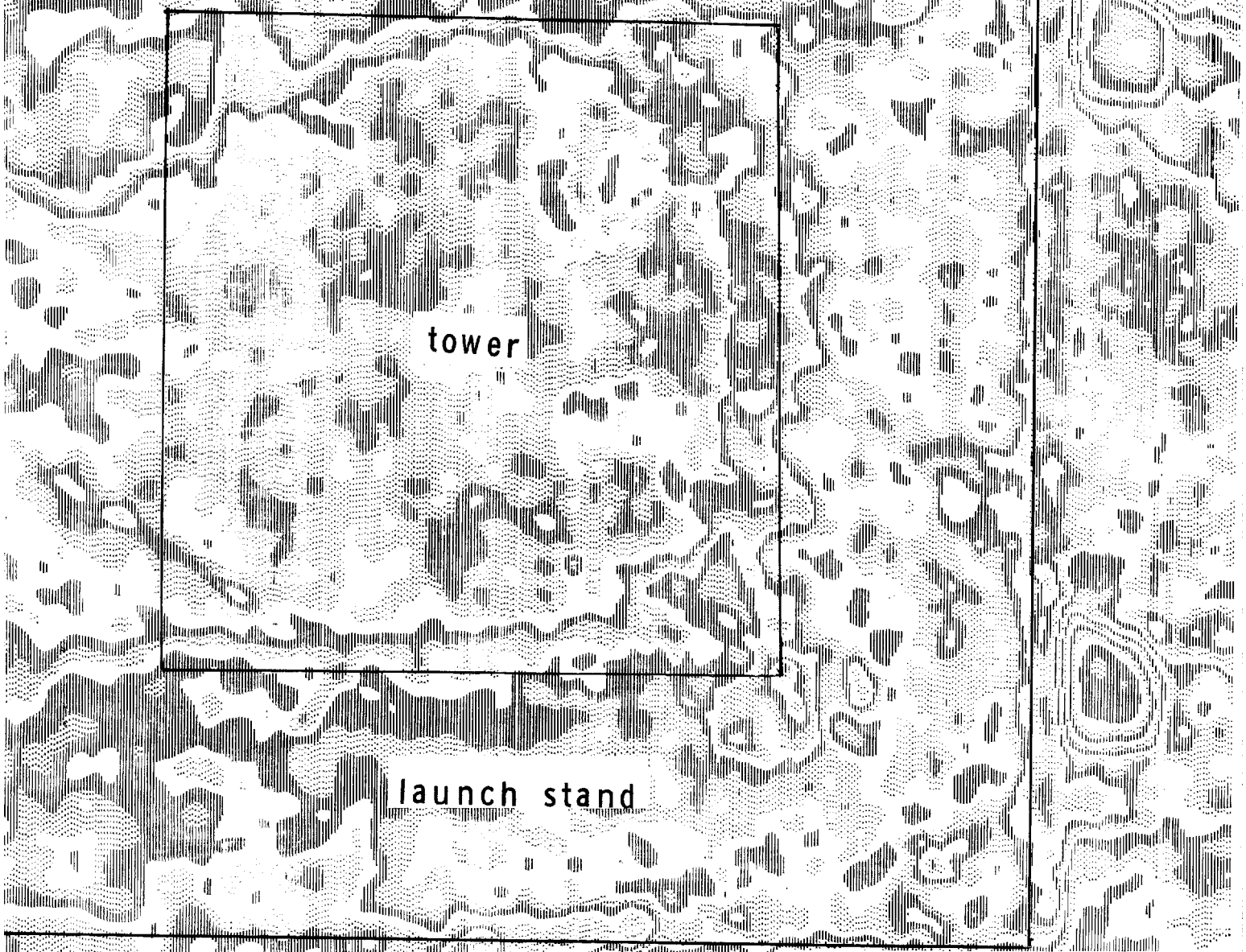
[redacted]

10X magnification

25X1

25X1

ISODENSIMETRIC TRACE OF LAUNCH STAND AND TOWER AT PAD A-I, TYURA TAM MISSILE TEST CENTER



[redacted]

25X1

100X magnification

2

25X1

25X1

[redacted]

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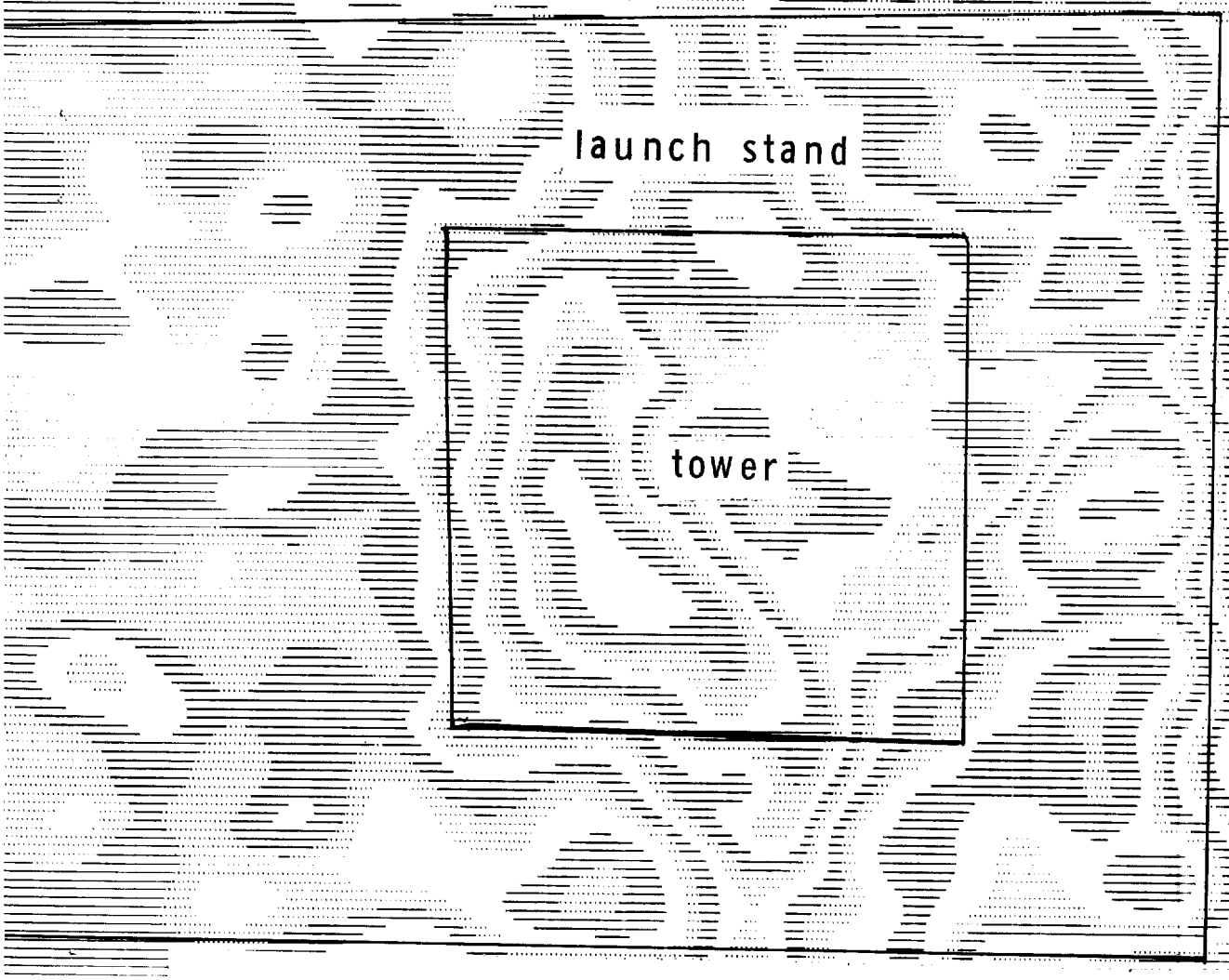
25X1
25X1



ISODENSIMETRIC TRACE OF LAUNCH STAND AND TOWER
AT PAD A-I, TYURA TAM MISSILE TEST CENTER

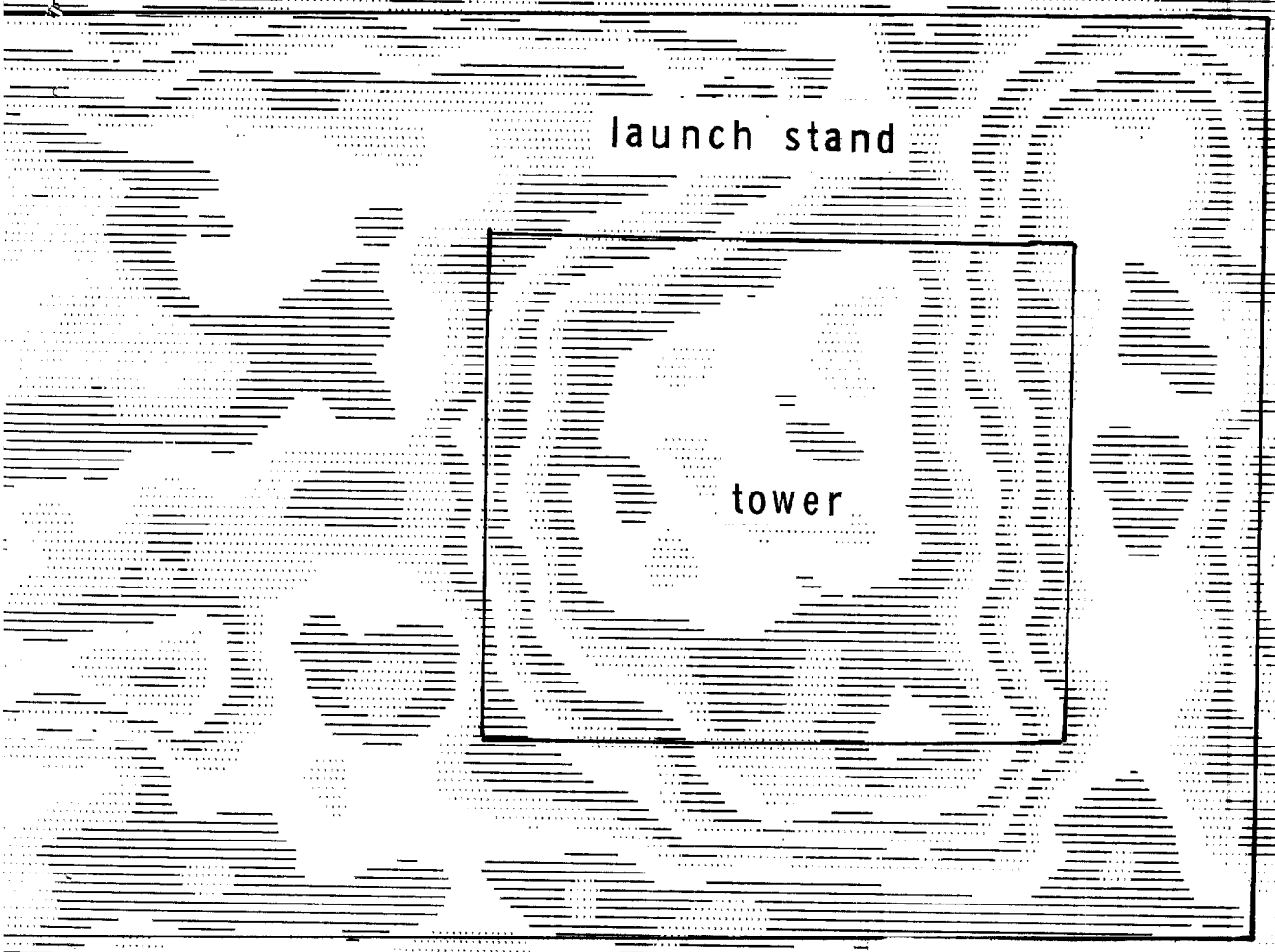
[redacted]

25X1

1000X magnification

25X1
25X1
25X1

ISODENSIMETRIC TRACE OF LAUNCH STAND AND TOWER AT PAD A-I, TYURA TAM MISSILE TEST CENTER



25X1

1000X magnification

25X1
25X1

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